AMENDMENT TO THE SPECIFICATION

Please replace the paragraph starting at page 7, line 9 of the specification with the following amended paragraph:

In still another embodiment, the method further comprises determining errors $\{\sigma''_m\}$ of said error-corrected experiment profile $\{A''_m\}$. In one embodiment, said errors are determined according to the equation:

~~$\sigma''_m(k) = \sqrt{[1-w(k)]\cdot\sigma^2_m(k) + w(k)\cdot\sigma'_m(k)}$~~

$$\sigma''_m(k) = \sqrt{[1-w(k)]\cdot\sigma^2_m(k) + w(k)\sigma'^2_m(k)}$$

where $\sigma_m(k)$ is the standard error of $A_m(k)$, $\sigma'_m(k)$ is determined according to the equation:

$$\sigma'_m(k) = \sqrt{\sigma^2_m(k) + mixed\_\sigma^2_m(k) - 2\cdot Cor(k)\cdot\sigma_m(k)\cdot mixed\_\sigma_m(k)}$$

where $mixed\_\sigma_m(k)$ is determined according to the equation:

$$mixed\_\sigma_m(k) = \frac{\sigma_m(k) + (M-1)\cdot\sigma_{ref}(k)}{M}$$

where $\sigma_{ref}(k) = \sqrt{\frac{1}{M-1}\sum_m^M (C_m(k) - \overline{C}(k))^2}$

and where Cor(k) is a correlation coefficient. In one embodiment, said Cor(k) is determined according to the equation:

$$Cor(k) = CorMax\cdot\left(1 - e^{-0.5\cdot\left(\frac{\overline{C}(k)}{avg\_bkgstd}\right)^2}\right)$$

where CorMax is a number between 0 and 1.

Please replace the paragraph starting at page 15, line 18 of the specification with the following amended equation:

In still another embodiment, the method further comprises determining errors $\{\sigma''_m\}$ of said error-corrected experiment profile $\{A''_m\}$. In one embodiment, said errors are determined according to the equation:

~~$\sigma''_m(k) = \sqrt{[1-w(k)]\cdot\sigma^2_m(k) + w(k)\cdot\sigma'_m(k)}$~~

$$\sigma_m''(k) = \sqrt{[1 - w(k)] \cdot \sigma_m^2(k) + w(k)\sigma_m'^2(k)}$$

where $\sigma_m(k)$ is the standard error of $A_m(k)$, $\sigma_m'(k)$ is determined according to the equation:

$$\sigma_m'(k) = \sqrt{\sigma_m^2(k) + mixed\_\sigma_m^2(k) - 2 \cdot Cor(k) \cdot \sigma_m(k) \cdot mixed\_\sigma_m(k)}$$

where $mixed\_\sigma_m(k)$ is determined according to the equation:

$$mixed\_\sigma_m(k) = \frac{\sigma_m(k) + (M-1) \cdot \sigma_{ref}(k)}{M}$$

where $\sigma_{ref}(k) = \sqrt{\frac{1}{M-1}\sum_m^M (C_m(k) - \overline{C}(k))^2}$

and where Cor(k) is a correlation coefficient. In one embodiment, said Cor(k) is determined according to the equation:

$$Cor(k) = CorMax \cdot \left(1 - e^{-0.5\left(\frac{\overline{C}(k)}{avg\_bkgstd}\right)^2}\right)$$

where CorMax is a number between 0 and 1.

Please replace the paragraph starting at page 36, line 16 of the specification with the following amended paragraph:

The errors $\{\sigma''_m\}$ of error-corrected experiment profile $\{A''_m\}$ can be determined according to the equation:

~~$\sigma_m''(k) = \sqrt{[1 - w(k)] \cdot \sigma_m^2(k) + w(k) \cdot \sigma_m'(k)}$~~

$$\sigma_m''(k) = \sqrt{[1 - w(k)] \cdot \sigma_m^2(k) + w(k)\sigma_m'^2(k)}\,. \qquad (22)$$

Please replace the paragraph starting at page 38, line 8 of the specification with the following amended paragraph:

The experiment and reference profiles $\{A_m, C_m\}$ can also be processed profiles in which nonlinearity is removed from raw or transformed experiment and reference profiles. Methods for nonlinearity removal are also called "detrending." In detrending, the measurement value, e.g., ~~intensity, dependant~~ intensity-dependent non-linearity in all

channels is minimized. In one embodiment, an average feature intensity profile of all channels is first calculated. This average profile is then used as the reference for correcting non-linearity. Each channel profile (experiment or reference profile) is compared to the average profile. If there is non-linearity between the two, the channel profile is adjusted to minimize the non-linearity.